

from the ordinary lighting mains or from private dynamos or accumulators; the current may be alternating or direct. The usual method would be to remove an ordinary incandescent lamp and insert an adaptor or plug in the place of the lamp.

The Liverpool Lint Company exhibited various specimens of lint, cotton wool, and bandages, and also a first field dressing. This is a small flat packet, enclosed in a cotton bag. The packet contains a pad of sublimated cotton wool, piece of cotton tissue, waterproof covering, bandage, and safety pins, enclosed in a waterproof covering, which is stated to be airtight, and in fact appears to be so. The packet appears to be well designed, and is likely to meet the emergencies for which it is designed. Among the objects exhibited by J. F. Macfarlan and Co. was a convenient method of packing gauze, so that it could be easily cut from rolls, and also sulphur cones made according to the recommendation of Sir Henry Littlejohn. The Medical Supply Association (Edinburgh) exhibited a large series of appliances for the operating room or consulting room, together with a series of Leitz's microscopes and installation for skiagraphy. They also showed forms of apparatus employed in clinical research and a series of models. Dr. Robertson (Cincinnati) showed through Messrs. Allen and Hanburys, the Pneumachemic Company's improved vaporising and condensed air apparatus for the application of medicated fluid in the form of a fine spray to the nose and throat. This apparatus is very ingeniously constructed, and it will undoubtedly be found useful by those who employ this method of medication. Messrs. Robinson and Sons (Chesterfield, and 55, Fann Street, London, E.C.) exhibited specimens of the absorbent lint, cotton wool, and other dressings manufactured by them. The material appeared to be excellent in manufacture. The Sanitary Wood Wool Company (26, Thavies Inn, E.C.) exhibited Hartmann's wood wool, and various preparations of this material, including wood-wool vaccination pads.

Mr. Frank A. Rogers (327, Oxford Street, W.) showed a special form of spray for patients' use and a consulting room spray consisting of one spray fitting into six different bottles, which can be held in the left hand, leaving the other free for operative purposes. He also exhibited various pharmaceutical preparations.

Messrs. Ross (London) exhibited a number of microscopes and other optical apparatus. Messrs. Lizars (Edinburgh, manufacturing opticians) showed various photographic cameras, the kromoskop, and other instruments. Mr. K. Schall (55, Wigmore Street, London) showed a series of instruments to be employed in electro-therapeutics, and also apparatus for skiagraphy and motors for surgical operations and for centrifugalising.

Mr. J. H. Walker (West Calder) exhibited a moving bed upon which he has expended much ingenuity. The inventor believes that the bed will be of use in the treatment of insomnia, and we learn from the *Edinburgh Medical Journal* that one has been in use at the Royal Infirmary, Edinburgh, and has produced excellent results in cases of insomnia and restlessness.

Messrs. John Ford and Co. showed a number of glass, china, and earthenware vessels for use in museums, in hospital wards, and in dispensaries.

Messrs. Gale and Sons (Birmingham) exhibited bedsteads for hospital use. This firm claim a speciality in having the bed fitted with either wood or india-rubber feet. Messrs. Billington Brothers (Liverpool) showed various styles of beds for use in hospitals. The Longwood Wire, Iron, and Steel Company (Warrington) showed strong spring beds for use in hospital, and Wood's patent galvanised wire bicycle saddle, which, it is claimed, prevents saddle soreness and reduces vibration.

DISINFECTANTS.

The Formalin Aldehyde Company (St. Mary-at-Hill) exhibited formalin in solid form and in solution, and various methods for degenerating formic aldehyde, and Trillat's autoclave. Jeyes's Sanitary Compounds Company, Limited, exhibited a series of fluids and other preparations for disinfecting purposes manufactured by them, including various forms of soap and various methods of dispensing their antiseptic drugs in capsules, etc. Izal disinfectants and various methods for its employment were exhibited by Messrs. Newton, Chambers, and Co., the manufacturers of izal. The

Sanitas Company exhibited Sanitas disinfecting fluid and various preparations thereof and appliances for its use.

HEALTH RESORTS.

The Municipality of Harrogate exhibited a working model of the Harrogate massage douche. The model, which was of full size, enabled the visitor to obtain a good idea of the mode by which these baths are plied at Harrogate. Specimens of the natural mineral waters of Harrogate were also shown, together with pictures of the place. The Borough of Leamington Spa also showed specimens of its waters, aerated and concentrated, and views of the town and neighbourhood.

TABLE AND MINERAL WATERS.

The Condal Water Company exhibited specimens of the aperient water bearing this name. It belongs to the sulphate of soda class, and is said to contain about 20 grains of sodium sulphate, and less than 2 grains of magnesium sulphate, and 1 grain of sodium chloride in the fluid ounce. The company states that this is the only water bottled at the Rubinat Springs. Hunyadi Janos, natural aperient water, was exhibited by Mr. Andreas Saxlehner; and Messrs. Alexander Riddle showed specimens of the Cusset Vichy mineral waters from the springs of St. Marie and Elizabeth. The barium waters from the Llangammarch Wells were shown by Messrs. Ingram and Royle, who also exhibited specimens of the natural mineral water of Vichy, Celestins, and Hôpital, and of Vichy salts and pastilles, and the salts obtained from the Carlsbad springs in the form of powder. Messrs. Dewsbury and Brown exhibited a series of artificial waters—soda, lithia, potash, etc.—and various medicated drinks. The Apollinaris Company exhibited Apenta, which is a natural bitter water containing magnesium sulphate and also sodium sulphate and Friedrichshall water, which contains magnesium as well of a large proportion of alkaline chlorides. They also showed the Apollinaris and Johannis table waters. The Kronthal Company were exhibiting their sparkling water.

BOOKS.

A large and interesting collection of recent books on medicine, surgery, midwifery, and the allied sciences were exhibited by the following firms:—Messrs. Baillière, Tindall, and Cox (London), Wm. Bryce (Edinburgh), Cassell and Co. (London), W. F. Clay (Edinburgh), James Craig (Edinburgh), Young J. Pentland (London and Edinburgh), The Rebman Publishing Company (London).

THE NEW FEVER HOSPITAL FOR THE CITY OF EDINBURGH.

In connection with the meeting of the British Medical Association, the Convener and members of the Public Health Committee of the Town Council of Edinburgh held a reception in the most advanced pavilion of the new city hospital, now being built at Colinton Mains, on the afternoon of Wednesday, July 27th. The company was received by Bailie Pollard (the convener), Bailie Gulland, Mr. Morham (the city architect), and Dr. Claude B. Ker, the Medical Superintendent of the City Hospital. Each member who attended the reception was presented with a fully illustrated quartopamphlet of 30 pages written by Bailie Pollard. The pamphlet, which bears the title, *The Care of Public Health and the New Fever Hospital in Edinburgh*, is dedicated to the President of the Association (Sir T. Grainger Stewart), and contains sixteen illustrations, many of them being double-page.

The farm of Colinton Mains, some three miles distant from Edinburgh, to the south-west, extending over an area of 130 acres, 350 to 400 feet above sea-level, and sloping towards the south-east, was bought by the Town Council for £20,500. Of this ground it was at once resolved to set apart 40 acres for the purposes of the new hospital, which is to have accommodation for not less than 600 patients, giving 15 patients to the acre, as against 100 per acre in the now existing hospital in Infirmary Street.

Approaches are to be provided from Comiston Road on the east and from Colinton Road on the west. A reference to Figure 1, and the use of a magnifying glass, will enable the reader to form an idea of the scheme of the hospital. The

main entrance faces the north. Immediately within it to the left is the porter's lodge, while on the right, a little further in, is the house for the medical superintendent. Directly facing the main entrance are the general offices with covered way, water tower, and courtyard behind. Still further back in the middle line are general stores, kitchen, and dining rooms, ward assistants' home, and nurses' home, all connected by covered ways. The space to the south of the nurses' home is set apart as a recreation ground for the nurses.

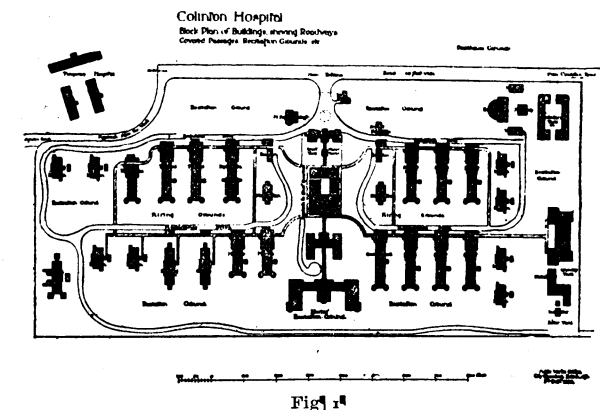


Fig. 1.

Scarlet Fever.
2, 3, 4, 5, 6, 7.

Typhoid.
15, 16.

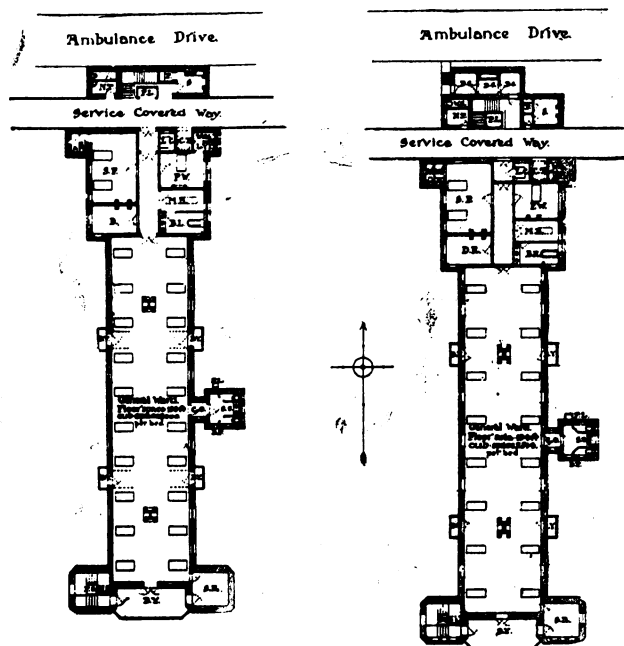


Fig. 2.

REFERENCE.—SP Separation ward; PW private ward; D duty room; BL bath and lavatory; MB movable and sink; LC linen closet; CT coal trolley; WC watercloset; LV lavatories; S scullery; P pantry; NT nurses' dressing room; BY balconies; FL foul linen discharge, etc.; BP bed pan cupboard; CO cut-off lobby; SS slop and scalding sink; PS panic staircase; SR sun room; PL patients' lift; DS discharge rooms; OR operating room; SR surgeon's room; AT anaesthetic room.

Right and left, that is, east and west, of these central administrative buildings are the ward pavilions, arranged in double rows. Those on the east, twelve in number, are entirely set apart for scarlet fever, for which disease 320 beds will be available. Of these, Wards 2, 3, 4, 5, 6, 7, each containing 20 beds (as will be seen from Fig. 2) are for the treatment of ordinary cases. Ward 1 is an observation ward of 4

beds (see Fig. 3) for the same disease, while 8 is a convalescent, and 9 to 12 isolation wards (for complicated cases) of the same size as those for observation. Near the general offices is a reception and a discharge room for scarlet fever cases, with a room for the nurse in charge. To complete the description of this eastern side of the hospital, there is to the north an ambulance station (Fig. 1), and near it are lecture rooms, pathological laboratory, museum, mortuary, *post-mortem* room, and chapel, with suitable arrangements for funerals leaving as unobtrusively as possible. At the south-east corner of the ground are laundry, washhouse, disinfectant, boilers, incinerator, and electrical power buildings.

On the west side of the central blocks ward pavilions are provided for diphtheria, typhoid, and erysipelas in the north-western, and measles, chicken-pox, whooping-cough, and typhus in the south-western ranges. Reception and observation wards—the latter for undecided cases—are placed near the principal entrance, as on the scarlet fever side, and isolation wards for complicated cases towards the further extremities of the respective groups. Ample open space is left for separate recreation grounds in convenient proximity to the pavilions for the several classes of disease, besides airing courts in spaces between the pavilions.

The numbers of cases of the different diseases for which provision has been made have been based upon the experience gained during the past twelve years in the old hospital.

The pavilions are placed so as to get as much sun as possible—that is, with their length north and south—the ward offices being kept, in most cases, at the north end of the ward, so that the shadow from their greater bulk may not fall on any part of the wards. The sanitary provisions for each are placed as far as may be with reference to the same consideration—that is, away from the south end of the wards, so that these may have the full benefit of the midday sun.

Besides the general ward, each pavilion has on each floor one two-bed and one single-bed ward for cases requiring separation, or in which treatment in a private ward may be desired by the patient. These, with the duty-room, bath-room, linen, coal, and brush closets, are arranged at the north end of each pavilion, and beyond the covered corridor are the ward scullery with pantry attached, nurses' dressing-room, with the stairs and lifts from the lower to the upper flat.

The spaces between the various blocks will never be less than 80 feet, so that (none of the blocks being over two floors in height) they will never overshadow each other. The stone being used is a light red, warm and pleasant-looking.

The drainage will be led from the hospital grounds by an isolated pipe to a point fully 800 yards away at the foot of Morningside, where it will join the city sewage system. Careful provision will be made for the proper flushing of all soil-pipes and the disinfection of all sewage before it leaves the hospital.

The floors are to be of fire-resisting construction, the surfaces in the wards being of solid teak plank flooring in narrow widths, closely jointed, embedded in prepared pitch, and impregnated with paraffin wax, those of the ward passages and generally of parts other than the wards and duty-rooms being finished in terrazzo or polished portland cement, with large hollow at base of walls and divisions.

The walls of offices to the height of 5 feet will be formed with glazed brick, tiles, or other non-absorbent material, and those of the wards with Keene's or Parian cement, with rounded hollows at all re-entrant angles. The heating will be by means of ventilating steam coils, supplemented by central ventilating stoves in the general wards, and ventilating grates of the most improved type in the smaller wards.

While special apparatus for the ventilation of particular parts will be provided, cross ventilation by suitable arrangement of the windows on opposite sides of the wards will be largely relied on for this important function.

In the sanitary towers attached to the several wards, and in most cases placed in a nearly central position on one side of the ward, there are provided waterclosets and slop sinks, ventilated bed-pan cupboards, and open-work shoots for soiled ward linen, down to carbolic tanks, and in the upper part of the tower an ample cistern chamber.

Discharging arrangements are provided, one near the principal entrance for scarlet fever patients, and one in connection with the pavilions for each of the other diseases. In and near the ambulance station and stableyard, accommodation for the men-servants and workshop premises will be provided.

It is intended that electric lighting should be adopted throughout the establishment. For certain culinary purposes it will be convenient to use gas, both in the general kitchen, etc., and in the sculleries attached to the several pavilion wards.

A coal store will be provided at the boilers near the south-eastern quarter of the premises, and another in connection with the central block, and smaller stores in each of the pavilions and other buildings where coals are required; for though it is intended that the general heating and cooking shall be largely by steam, open fires will be provided for in the wards, general offices, and in the day rooms of the homes.

Hydrants and hose for use in case of fire will be provided in convenient situations throughout the premises. For additional supply and pressure for this purpose, as well as to meet the possible contingency of the main water supply being at times turned off for repairs, it is purposed to erect on the higher ground a water tower, with tank of sufficient size to secure good supply on such occasions.

The buildings, with roadways and covered passages, are shown *en bloc* in Fig. 1. By the ambulance drives patients about whom there is no doubt as to the disease from which they are suffering are at once carried to their appropriate wards.

For convenience and protection in passing from one part of the premises to another, covered ways are provided between the general offices, central premises, pavilions, and staff quarters. These, though protected by roofs, will be to a great extent open on the sides, so that the risk of conveying infection from one part to another will be minimised.

Beneath certain of the covered ways, and in convenient lines at other parts, subways will be provided for the conveyance of water, gas, steam, and electric connections.

By the covered ways food will be transmitted from the kitchen with such promptitude that it may be expected to be served hot and fresh even in the most distant wards. With this in view the kitchen block is placed in the centre of the area.

In Fig. 2 is given the plan of a typical scarlet fever ward and of a typhoid fever ward. The amount of cubic air space for each scarlet fever patient will be 2,000, while for whooping-cough and chicken-pox—the patients being almost exclusively very little children—1,690 cubic feet may be considered ample. Attention is called to the separation of the nurses' dressing room, pantry, and scullery from the ward by the cut-off passage. The position of the ward accessories and conveniences near the centre of the block may be noted. It will also be seen that private wards and separation wards for more serious cases are provided.

The peculiarity of the typhus block merits special attention. Special provision is made for cross ventilation, and an allowance of 3,042 cubic feet is made for each patient. Edinburgh does not now produce typhus on her own soil, but cases are occasionally introduced into the city, and it is still needful to guard against this disease. The ward will be of one floor, and well apart from the other blocks.

Erysipelas (see Fig. 3B).—In many fever hospitals no cases of this disease are taken. But it would be a very serious drawback to the work of the Royal Infirmary, to say nothing of cases of erysipelas occurring outside, if patients seized with this disease could not be at once removed from the proximity of others. The cubic space allowed is 2,028 feet per patient.

Isolation and Observation Blocks.—These will be of one floor (see Fig. 3A).

Servants' Home.—Southward from the kitchen block is the servants' home, a building of two storeys and attic, and consisting of four large dormitories, two on the ground floor and two on that above, each divided into cubicles, with an intermediate building, comprising rooms for headservants—two on each storey—a day room on the lower storey and a sick room on the upper, and over these a large attic for recreation and general use. Ample bath, lavatory, and watercloset accommodation are provided on each flat.

General Offices.—These comprise central entrance hall, with telephone and post-office, with medical superintendent's offices on one side and the matron's on the other; a room for the chaplain, and a mess room for the medical staff, which will serve also for meetings of the Visiting Committee. On an upper storey are sitting room and bedrooms for the medical assistants, and two spare rooms.

Nurses' Home.—The rooms of the lady superintendent, who is of course the chief of the nursing department, are situated on the ground floor. A spacious recreation room, suitable for lectures and recitals, is also placed on this floor. One principle on which the Public Health Committee have always acted towards their nursing staff is that the nurses in a fever hospital, above all places, should receive the fullest consideration as to food, hours of relaxation, and general comfort that is consistent with the proper discipline and efficiency of the institution.

Isolation & Observation.
(9, 21, 22, 23, 24)

(1, 2)

Erysipelas
(7)

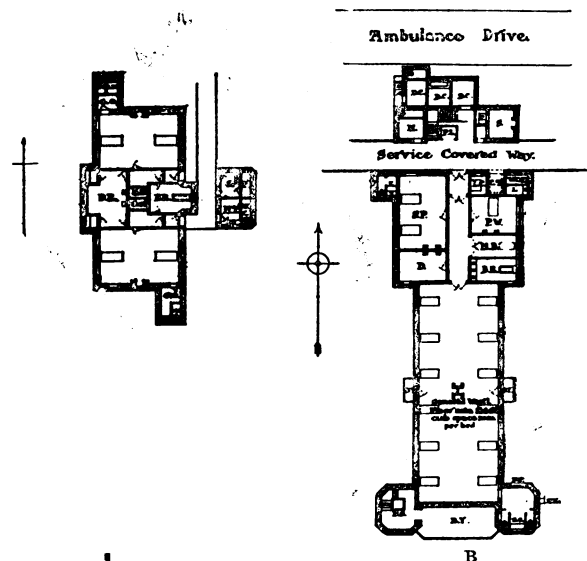


Fig. 3]

REFERENCES.—PW Private ward; SP separation ward; D duty room; BL bath and lavatory; LC linen closet; P pantry; S scullery; NT nurses' toilet; WC watercloset; CO cut-off lobby; BP bed pan cupboard; FL foul linen discharge and carbolic tank; SS slop and scalding sink; BY balcony; DC discharge rooms, etc.; MB movable bath; CR coal trolley, etc.; LV lavatory; PS panic stair; SR sun room; PL patients' lift.

The building is of four stories—in which are provided not only suitable apartments for the matron, but separate rooms for 130 nurses, with a few additional spare rooms; three day-rooms and library for the use of the nurses; two sick-rooms, with small kitchen attached; a large recreation room for the general use of the staff; bath and lavatory accommodation and linen stores on each floor; luggage lift and staircase for each wing. The arrangement of the rooms on the several floors of the nurses' home and the corridors leading to them being to a large extent identical on the several flats, the dividing walls, with the corridors and staircases, can be constructed of fireproof material, the risk of danger from fire being thereby greatly diminished, while the means of escape in the event of its occurring are largely secured. Except in the day-rooms, sick-rooms, and matron's quarters, and at convenient points in certain of the corridors, it is intended to heat with steam radiators, thereby dispensing with fireplaces both in the nurses' and ward assistants' homes, thus further reducing the risk of danger from fire.

The nurses' and ward assistants' homes have been so planned that nearly every room will, more or less, partake of the beneficial effects of sunshine, while a fair share of space

or outdoor recreation is provided distinct from that for the patients.

Stores, Kitchen Offices, Dining-rooms, etc.—The block comprising the stores, kitchen offices, and dining-rooms occupies a central position on the premises. The store building is in two storeys, immediately to the north of a courtyard and in rear of the general offices, for goods delivery. Besides a spacious apartment for receiving and distributing, there is an office, a weighing room and counter, a stair for access to the upper floor, and beyond these a mattress and bed-furnishing store and mending room, to the south of which are a dispensary, with separate entrances and counters for scarlet fever and other nurses, drug store, and shed for trolleys for the distribution of food. On the upper storey of this building ample space is provided for the various articles to be stored.

Immediately to the south of the store building and separated from it by a small courtyard are the kitchen offices and dining-room block, comprising kitchen, general scullery, vegetable scullery and store, larder, meat, poultry, fish, vegetable, and milk stores. Entering off the kitchen are two serveries, one for the distribution of food to the several pavilions, and the other for serving it to the nurses' and servants' dining rooms, in proximity to which are pantries for washing up and storing the dinner dishes, also a cook's room and stores. All the cooking will be done by steam or gas.

The nurses' dining room is provided with a glazed screen, dividing it in two, with separate entrances to permit of the separation of scarlet fever nurses from the others. That for the servants adjoins the kitchen, and has also a separate entrance.

Laundry, Wash House, and Boiler House.—Here again the utmost care has been, and will continue to be, taken by the architect, to secure the best practicable results. The wash house and laundry buildings, with arrangement for staff clothing, etc., distinct from those of the patients, and the disinfectors, boilers, and incinerators, are placed towards the south-east quarter of the establishment, sufficient steam power being provided for machinery and fittings of the most approved description for wash house, laundry, disinfectors, culinary purposes, electric lighting, and general heating of the entire premises, and for the sterilising of infected matters from drainage before entering the main outlet.

Probable Cost.—The estimated cost of the whole establishment, exclusive of the site, is close upon £350 per bed, but including the site, the cost may reach a total of £400 per bed, or £240,000 in all. If this sum is not exceeded, the hospital will be by no means the most expensive, while it will be considerably the largest, fever hospital in the United Kingdom. With the knowledge now possessed of what such a hospital ought to be, the Health Committee can hardly be satisfied, if at its completion it should not compare favourably with any hospital then in use.

LAY SUGGESTIONS FOR HOSPITAL REFORM.

THERE are at the present time a good many persons who are ready to pronounce off-hand opinions about hospital reform, and to suggest the most violent changes, whose writings show no personal acquaintance with the subject, far less any patient study of it. A letter, signed "Order," which appeared in the *Saturday Review* for July 30th, headed "Some Mistakes of Hospital Management," may, we think, very fairly be classed in this category. In the first place, it does not bear its author's name—a fatal defect. If the writer has any personal experience of hospital management, he should say who he is, and where and how that experience has been obtained. His letter, however, is moderate in tone and friendly in spirit, and we doubt not is meant to do good. The following are its conclusions:

1. There is an urgent necessity for organisation of all the charitable hospitals so as to cut down management expenses, arrange and define localisation, and prevent overlapping.
2. There is an urgent need for the complete separation of medical schools and hospitals. The medical schools should be under University control; the hospital staff should be independent of the medical school.
3. The hospital staff should consist of physicians and surgeons paid for their work as such, and required to do their work as such.
4. Although urgent cases should at all times be taken in, subsequent investigation should decide whether or no the patients should be charged nothing, or on what scale they should be charged for maintenance and attendance.

The letter deals with the hospitals that have schools attached to them almost exclusively; though on this point the writer is not perfectly clear, as he speaks rather vaguely of "the great general hospitals," whose expenditure he puts at £500,000 a year and their expenses of management at £30,000, or 6 per cent., and he says that if we were "to take into account the multitudes of special hospitals, the proportion of expenses would be enormously increased." This is much too vague as a foundation for a general charge of extravagance in management. Each hospital must be dealt with on its own merits and in view of its own circumstances. Those whose necessities compel expensive appeals to the public for support must spend more than others on what is classed as "administration" in the form prescribed by the Hospital Sunday Fund. If this item be excluded, we believe that the Administration expenses of our hospitals are moderate, and it must be remembered that the distribution of the Sunday Fund is regulated to some extent by the expenses of administration, and that this acts as a powerful motive to economy. At the same time, we cannot but agree with this writer in deploring the fact that only about a tenth part of the money spent by the hospitals "comes from invested endowments; the rest has to be begged, or borrowed, or prayed for by the methods which the advertising ingenuity of the managers can best devise."

This is, indeed, a lamentable state of things; but we differ from the writer as to the remedy for it. His letter points unmistakably to some "public body or State department," which is to regulate the whole as one vast institution, and distribute its revenue. If this is (as we infer) his meaning, a necessary corollary is that the public body must be charged with the duty of making good the deficiency out of rates or taxes. The result of such a scheme is to be seen in the hospitals of Paris; and we cannot say that in a medical point of view it is satisfactory, whilst it necessarily kills charity. In this country it would make the hospital system a part of the Poor Law. Our suggestion would, on the contrary, be one for the promotion of private charity. Committees should be formed in every parish of London for the purpose of collecting subscriptions for the local hospitals, and it should be urged as a duty on all persons of means, that after making necessary provision in their wills for their children and near relations, a portion of their superfluity should be devoted to the permanent endowment of their local hospital.

But if we differ seriously from our reformer's first suggestion, we dissent absolutely and entirely from his second and third. They could hardly, we think, have proceeded from anyone having any practical acquaintance with the subject. Our hospitals have attained their present high position, and have rendered the priceless services which they have to the progress of the healing art, precisely through that connection with the medical schools which he proposes to abolish. We will not insult our readers by arguing the proposition, but only ask them to consider what our hospitals would become if, instead of being officered by all the chief physicians and surgeons of the day, they were handed over to men deprived by this ingenious scheme of "reform" of all the rewards of an honourable ambition.

His fourth proposal need not long detain us. Its chief effect would be to turn the hospitals into cheap surgeries or dispensaries, and still further to increase the difficulty of getting a living by any practice except among the rich.

Yet inexperienced as our critic probably is, and crude as are undoubtedly his notions of reform, there are some truths among his objections to the present system. No one can help admitting that a system leaves much to be desired in which the great hospitals are crowded together in a comparatively small area, leaving the rest of this enormous city with hardly any. Nor can it be right that the "general" hospitals should be separated from those of the Poor Law so completely as they now are. This separation is, in fact, so absolute that the Poor-law infirmaries are quite left out in the schemes of most of amateur reformers, as they are in the letter of our present critic. He actually says that "no system exists by which an inhabitant of any district should naturally go to any particular hospital," quite oblivious of the existence of the parish infirmary, to whose services the poor have a right under certain conditions; and quite oblivious, also, of the fact